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A SUMMARY OF SEVEN FIRE STUDIES CONDUCTED ON EAST SIDE FORESTS
DURING 1992-93

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During the summer of 1992 and 1993 a 2-person team sampled eleven areas throughout eastern Montana to get a better understanding of past fire history and expected fire return periods for the Fire Groups described by Fisher and Clayton (1983).

Studies were completed on three of the areas including Birch Creek and Doolittle Creek on the Beaverhead Forest and Big Belts on the Helena Forest. Unfortunately because of the reassignment of the principle investigator the remaining studies were not completed. These included Bridger Creek, Deer Creek, Shields River, and Squaw Creek on the Gallatin Forest and Odell Lake-Bible Camp on the Deerlodge-Beaverhead Forest. In addition samples were taken near Red Mountain on the Gallatin Forest and on Finnegan Ridge on private land owned by Ted Turner. These samples were taken along the grass-shrub land interface with the forest communities. Field work was also completed on three additional studies: Little Belts near Kings Hill, Front Range near Choteau both on the Lewis & Clark Forest and the Pryor Mountains on the Custer Forest. This information could possibly be in the files of the Regional Office in Missoula, Montana. Following is a summary of the data collected on the seven areas and a preliminary assessment of the data.

Tenth acre plots were established on a variety of aspects, elevation and habitat types throughout a selected drainage. Age data was collected on each plot to establish the age structure of the stand. Borings were taken at stump height (12") with a chain saw driven increment borer. Usually 3 trees were sampled. Where another age class was apparent a sample of three trees was also taken from this cohort. Birth age was determined by adding 5 years to the ring count for lodgepole pine and ponderosa pine and 10 years for other species. This was done to account for growth to stump height. It was assumed that the birth of a tree was associated with a fire event. A search of the area was made to locate fire scarred trees. In some cases scars were found on dead trees or stumps from harvested trees. In these cases an estimate of the year of death was determined from District records or site information. Stems per acre were based on a tenth acre sample except for trees less than 4.9 inches. These were sampled on a hundredth acre plot.

Information was then plotted on a chronological table showing the date of the fire scar and the birth year of the stand components. Using the fire scar as the most reliable element and supplementing with birth information a fire history was developed for each plot. When building the fire history for an area it was assumed that lodgepole pine establishment would occur within 5 years of a fire event while it could take 10 years or more for Douglas-fir and limber pine. In some cases this resulted in having to make a judgment call where regeneration covered an extended period. Did this represent one fire or were there a number of events close together? In some cases no fire scars were found in an area and only tree age was available to help determine the fire return period. This resulted in extended periods with no fire information for the site and consequently the fire cycle may be underestimated.

Fire frequency for a site was based on the number of fire events between the birth year of the oldest member of the stand and 1900. In some cases a very old tree may be present which lengthened this period and if fire scars are limited the fire cycle may be underestimated. In

the fire chronology tables plot information is shown followed by any fire scar trees associated with that plot.

SITE ONE – BRIDGER CREEK, GALLATIN NATIONAL FOREST

TABLES

1	Bridger Creek - Site & Vegetation Data
2	Bridger Creek – Tree Count – Per Acre by Plot
3	Bridger Creek - Dominant Tree DBH & Age by Plot
4	Bridger Creek - Birth & Fire Events for Plots by Sample Area
5	Bridger Creek - Projected Fires for Sample Areas and for the Drainage
6	Bridger Creek - Fire Return Frequency by Sample Area
7	Bridger Creek - Fire Return Frequency by Fire Group

TABLE 1A BRIDGER CREEK - SITE & VEGETATION DATA									
Plot No	220	221	222	223	224	225	226	227	228
Location	NW,SW,S10 T3S,R15E	NE,SW,S10 T3S,R15E	SW,SW,S15 T3S,R15E	NW,NW,S10 T3S,R15E	NW,SE,S25 T2S,R15E	NE,NW,S16 T3S,R15E	SW,SW,S16 T3S,R15E	NW,SE,S16 T3S,R15E	SE,NW,S9 T3S,R15E
Habitat type	DF/ninebark – ninebark	DF/ninebark- ninebark	DF/snowberry- snowberry	DF/ninebark –ninebark	DF/bluebunch Wheatgrass	DF/juniper	DF/ninebark –ninebark	DF/juniper	DF/ninebark- pinegrass
Elevation	6730	6590	6220	6120	5130	6660	6550	6290	6600
Aspect	314	15	25	114	160	245	219	255	19
Slope	40	18	39	35	39	25	23	30	34
Bare soil	0	0	0	0	10	3	20	0	0
Rock & gravel	0	0	0	0	0	10	0	0	0
Litter&duff	90	90	80	80	80	70	80	90	90
Wood	3	3	10	20	3	10	0	10	0
Moss&lichen	3	10	10	3	0	10	0	3	0
Basal veg	3	0	3	0	0	3	0	0	3
Dom tree 1	DF	DF	LP	DF	PP	Limber pine	DF	DF	DF
Dom tree 2	-	-	DF	-	-	DF	LP	LP	LP
Basal area	190	240	110	80	50	70	120	120	190
BA dead	10	25	15	0	0	10	10	5	20
Trees/acre	650	720	490	80	30	230	550	350	370
DBH	12	10	12	18	18	9	12	12	10
Height	43	36	71	75	61	25	45	47	52
Age	252	205	130	215	96	165	183	220	240
Tree cover	60	40	60	40	20	20	40	50	50
TC seedling	1	1	10	3	10	3	1	1	1
TC sapling	3	1	10	1	1	3	3	3	1
TC pole	50	40	50	1	3	10	20	3	10
Shrub	10	30	50	50	0	10	20	20	10
Graminoids	0	1	3	0	60	3	1	3	10
Forb cover	0	0	1	0	0	10	1	0	0
Fern&moss	1	3	3	0	0	0	0	0	0

TABLE 1B BRIDGER CREEK SITE & VEGETATION DATA									
Plot No	229								
Location	NW,SW,S2 T3S,R15E								
Habitat type	DF/ninebark – ninebark								
Elevation	6460								
Aspect	353								
Slope	28								
Bare soil	0								
Rock & gravel	0								
Litter&duff	80								
Wood	10								
Moss&lichen	0								
Basal veg	3								
Dom tree 1	DF								
Dom tree 2	-								
Basal area	220								
BA dead	15								
Trees/acre	820								
DBH	12								
Height	60								
Age	244								
Tree cover	60								
TC seedling	1								
TC sapling	1								
TC pole	10								
Shrub cover	0								
Graminoids	0								
Forb cover	0								
Fern&moss	0								

TABLE 2A BRIDGER CREEK P220 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF	100	400	150			
Spruce						
AF						
WBP						
Juniper						

TABLE 3A P220 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	10	250
	2	DF	14	263
	3	DF	14	245
Dominant tree 2				
	1			
	2			
	3			

TABLE 2B BRIDGER CREEK P221- TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF	300	350	70			
Spruce						
AF						
Limber			10			
Juniper						
Aspen						

TABLE 3B P221 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	14	209
	2	DF	14	199
	3	DF	12	207
Dominant tree 2				
	1			
	2			
	3			

TABLE 2C BRIDGER CREEK P222 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		90	160			
DF	100	140				
Spruce						
AF						
WBP						
Juniper						

TABLE 3C P222 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	12	130
	2	LP	12	134
	3	LP	12	128
Dominant tree 2				
	1			
	2			
	3			

TABLE 2D BRIDGER CREEK P223 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		10	40	20	10	
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3D P223 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	18	199
	2	DF	14	232
	3	DF	20	214
Dominant tree 2				
	1			
	2			
	3			

TABLE 2E BRIDGER CREEK P224 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP		10	10	10		
LP						
DF						
Spruce						
AF						
WBP						
Juniper						

TABLE 3E P224 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	PP	18	81
	2	PP	18	109
	3	PP	18	99
Dominant tree 2				
	1			
	2			
	3			

TABLE 2F BRIDGER CREEK P225 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP			20			
LP						
DF		90	20			
Spruce						
AF						
Limber		70	30			
Juniper						
Aspen						

TABLE 3F P225 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LIM	8	190
	2	DF	8	121
	3	LIM	10	200
Dominant tree 2				
	1			
	2			
	3			

TABLE 2G BRIDGER CREEK P226 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10	10	10		
DF	200	240	60	10		
Spruce						
AF						
Limber			10			
Juniper						

TABLE 3G P226 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	12	161
	2	LP	18	144
	3	LP	14	215
Dominant tree 2		DF	16	214
	1			
	2			
	3			

TABLE 2H BRIDGER CREEK P227 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10	40	10		
DF	100	100	90			
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3H P227 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	10	222
	2	LP	14	243
	3	LP	10	219
Dominant tree 2		DF	12	202
	1			
	2			
	3			

TABLE 2I BRIDGER CREEK P228 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP			40			
DF		150	170	10		
Spruce						
AF						
WBP						
Juniper						

TABLE 3I P228 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	10	253
	2	DF	12	232
	3	DF	14	235
Dominant tree 2				
	1	LP	12	243
	2	LP	10	210
	3	LP	10	224

TABLE 2J BRIDGER CREEK P229 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP			20			
DF		510	270	20		
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3J P229 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	16	222
	2	DF	12	263
	3	LP	12	247
Dominant tree 2				
	1			
	2			
	3			

FIRE HISTORY LEGEND

B – Birth

X – Fire scar

Lp – lodgepole pine

Df – Douglas-fir

Lim – Limber pine

+/- - Indicates the date could be more or less

TABLE 4A BIRTH & FIRE EVENTS FOR PLOTS DERBY MOUNTAIN – AREA 1									
YEAR	P222	Scar J DF	Scar K DF	P225	Scar LIM	P226	P227		AREA 1 FIRES
1891									
1888									
1887			X						FIRE
1885									
1883									
1880									
1878		X							FIRE
1872		X							FIRE
1871				Bdf					
1865									
1864	Blp								
1862	Blp								FIRE
1861									
1858	Blp								
1856			X						FIRE
1855									
1854									
1852									
1848						Blp			FIRE
1845									
1842									
1833									
1831						Blp			FIRE
1828									
1807									
1805									
1802				Blim					
1798									
1796									
1793									
1792				Blim					
1790							Bdf		FIRE
1789									
1783									
1782									
1778						Bdf			
1777						Blp			FIRE
1773							Blp		
1770							Blp		FIRE
1766									
1765									
1764									
1763									
1762									
1755			Blp						
1754									
1753		Blp							FIRE
1752									
1751									
1749							Blp		FIRE
1706					X				FIRE
1523					B				FIRE

TABLE 4B BIRTH & FIRE EVENTS FOR PLOTS									
SECTION NINE – AREA 2			BRIDGER CREEK – AREA 3				DERBY CREEK – AREA 4		
YEAR	P228	AREA 2 FIRES		P224	Scar 29 pp	AREA 3 FIRES		P229	AREA 4 FIRES
1911				Bpp					
1893				B pp					
1885					X pp	FIRE			
1883				B pp					
1878									
1872									
1871									
1865									
1864									
1862									
1861									
1858									
1857									
1856									
1845									
1842									
1831									
1816									
1815									
1805									
1802									
1798					B pp	FIRE			
1796									
1793									
1792									
1790									
1789									
1783									
1782	B lp	FIRE							
1778									
1777									
1773									
1770								B df	FIRE
1768	B lp	FIRE							
1760	Bdf								
1757	Bdf	FIRE							
1754									
1753									
1752									
1751									
1750									
1749	B lp	FIRE							
1747									
1745								B lp	FIRE
1739	Bdf	FIRE							
1729								B df	FIRE
1709									
1706									
1523									

TABLE 4C BIRTH & FIRE EVENTS FOR PLOTS HEAD OF DERBY CREEK – AREA 5								
YEAR	P220	Scar L DF	Scar M DF	P221	Scar wbp	P223		AREA 5 FIRES
1967		X						FIRE
1926		X						FIRE
1899		X05						FIRE
1886		X						FIRE
1878								
1872								
1871								
1869								
1868		X63						FIRE
1865								
1864								
1862								
1861								
1858								
1857								
1856								
1853								
1852								
1848								
1846			X					FIRE
1842								
1831								
1812					X			FIRE
1799			X					FIRE
1793				B df		Bdf		
1792								
1785				B df				
1783				B df				FIRE
1778						B df		
1772								
1768								
1764		X66						FIRE
1760						B df		
1747	B df							
1742	B df				X			FIRE
1739								
1731								
1729	B df							FIRE
1709								
1706								
1632		Bdf						FIRE
1597					B			FIRE
1535			B df					FIRE

TABLE 5 BRIDGER CREEK PROJECTED FIRES FOR SAMPLE AREAS AND FOR THE DRAINAGE						
YEAR	DERBY MOUNTAIN	SECTION NINE	BRIDGER CREEK	DERBY CREEK	HEAD OF DERBY CREEK	DRAINAGE FIRES
1967					F	F
1926					F	F
1899					F	F
1887	F					
1885			F			F
1878	F				F	F
1872	F					F
1868					F	F
1862	F					F
1856	F					F
1848	F					
1846					F	F
1831	F					F
1812					F	F
1799					F	
1798			F			F
1790	F					F
1783					F	
1782		F				F
1777	F					F
1770	F			F		F
1768		F				
1764					F	F
1757		F				F
1753	F					F
1749		F				F
1745				F		
1742					F	F
1739		F				
1729				F	F	F
1706	F					F
1632					F	F
1597					F	F
1535					F	F
1523	F					F

TABLE 6 BRIDGER CREEK FIRE RETURN FREQUENCY BY SAMPLE AREA	
DERBY MOUNTAIN	1900-1523=377/13 = 29 YEAR RETURN
SECTION NINE	1900-1739=161/5 = 32 YEAR RETURN
BRIDGER CREEK	1900-1798=102/2 = 51 YEAR RETURN
DERBY CREEK	1900-1729=171/3 = 57 YEAR RETURN
HEAD OF DERBY CREEK	1900-1535=365/13 = 28 YEAR RETURN

FIRE RETURN FOR THE DRAINAGE = 1900-1523= 377/26 = 14.5 YEAR RETURN

TABLE 7 FIRE RETURN FREQUENCY BY FIRE GROUP										
YEAR	FG 4		FG 6							
PLOT	P224	P228	P220	P221	P222	P223	P225	P226	P227	P229
1967			F							
1926			F							
1899			F							
1887					F					
1886			F							
1878					F					
1872					F					
1871							F			
1868			F							
1862					F					
1856					F					
1848								F		
1846			F							
1831								F		
1812				F						
1799			F							
1790							F		F	
1789										
1786										
1783				F		F				
1782		F								
1780										
1778										
1777								F		
1770									F	F
1768		F								
1764			F			F				
1757		F								
1753					F					
1749		F							F	
1745										F
1742			F	F		F				
1739		F								
1729			F							F
1706							F			
1657										
1632			F							
1597				F						
1535			F							
1523							F			
Fire return plot level	51	32	36.5	76	24.5	53	94	41	50	57
Avg return for plot level	42		54							

SITE TWO – DEER CREEK, GALLATIN NATIONAL FOREST

TABLES

1	Deer Creek - Site & Vegetation Data
2	Deer Creek – Tree Count – Per Acre by Plot
3	Deer Creek - Dominant Tree DBH & Age by Plot
4	Deer Creek - Birth & Fire Events for Plots by Sample Area
5	Deer Creek - Projected Fires for Sample Areas and for the Drainage
6	Deer Creek - Fire Return Frequency by Sample Area
7	Deer Creek - Fire Return Frequency by Fire Group

TABLE 1A DEER CREEK - SITE & VEGETATION DATA									
Plot No	201	202	203	204	205	206	207	208	209
Location	NW,NE,S15 T3S,R14E	SW,SW,S10 T3S,R14E	SW,NW,S11 T3S,R14E	NE,NW,S14 T3S,R14E	NW,NE,S14 T3S,R14E	SE,NW,S14 T3S,R14E	SW,NE,S14 T3S,R14E	SE,NW,S1 T3S,R14E	NW,SE,S36 T2S,R14E
Habitat type	DF/pinegrass – pinegrass	DF/ninebark - pinegrass	DF/ninebark - ninebark	DF/ninebark – pinegrass	DF/snowberry – pinegrass	DF/juniper	DF/snowberry - pinegrass	DF/ninebark - ninebark	DF/ninebark - ninebark
Elevation	6080	6090	6730	6770	6920	6490	6830	6430	6330
Aspect	22	263	300	308	67	237	130	90	255
Slope	16	51	17	37	44	42	32	47	43
Bare soil	0	0	10	0	0	0	0	0	0
Rock & gravel	10	3	3	0	0	3	0	3	3
Litter&duff	80	80	70	90	90	40	90	90	90
Wood	0	10	10	10	10	0	3	3	3
Moss&lichen	0	0	3	0	0	0	0	0	0
Basal veg	0	3	0	0	0	1	3	0	0
Dom tree 1	DF	DF	LP	DF	DF	DF	DF	DF	DF
Dom tree 2	LP	-	DF	LP	-	LP	-	-	-
Basal area	170	90	210	140	140	130	140	90	180
BA dead	0	15	15	40	25	20	5	10	10
Trees/acre	260	230	1270	430	130	310	210	440	240
DBH	16	12	12	12	23	15	16	10	16
Height	75	56	57	51	80	48	78	42	45
Age	214	208	213	222	213	218	191	77	234
Tree cover	30	60	50	60	20	50	40	40	30
TC seed	20	10	1	1	1	1	1	1	1
TC sap	3	1	10	3	0	10	1	10	3
TC pole	3	10	30	10	0	10	10	10	10
Shrub cover	0	20	40	10	20	3	10	50	20
Graminoids	30	10	0	20	10	0	3	0	0
Forb	0	0	0	0	0	0	0	0	0
Fern&moss	0	0	0	0	0	0	0	0	0

TABLE 1B DEER CREEK - SITE & VEGETATION DATA									
Plot No	210	211							
Location	SE,NE,S10 T3S,R14E	SE,NE,S14 T3S,R14E							
Habitat type	DF/ninebark – pinegrass	AF/huckleberry							
Elevation	6160	6880							
Aspect	270	340							
Slope	28	54							
Bare soil	0	0							
Rock & gravel	0	0							
Litter&duff	40	80							
Wood	10	10							
Moss&lichen	0	3							
Basal veg	0	10							
Dom tree 1	DF	DF							
Dom tree 2	LP	-							
Basal area	100	220							
BA dead	10	15							
Trees/acre	210	300							
DBH	14	15							
Height	72	86							
Age	211	242							
Tree cover	40	50							
TC seed	20	20							
TC sap	1	1							
TC pole	20	3							
Shrub cover	3	3							
Graminoids	10	10							
Forb	0	3							
Fern&moss	0	0							

TABLE 2A DEER CREEK P201 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		30	60	10		
DF		100	30	30		
Spruce						
AF						
WBP						
Juniper						

TABLE 3A P201 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	16	229
	2	DF	16	220
	3	DF	16	210
Dominant tree 2				
	1	LP	14	230
	2	LP	14	246
	3	LP	16	220

TABLE 2B DEER CREEK P202- TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10				
DF	100	70	50			
Spruce						
AF						
Limber						
Juniper						
Aspen						

TABLE 3B P202 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	12	176
	2	DF	12	196
	3	DF	16	202
Dominant tree 2		LP	18	261
	1			
	2			
	3			

TABLE 2C DEER CREEK P203 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	200	80	110	30		
DF	700	60	90			
Spruce						
AF						
WBP						
Juniper						

TABLE 3C P203 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	12	225
	2	LP	14	227
	3	LP	12	189
Dominant tree 2				
	1	DF	12	239
	2	DF	12	226
	3	DF	14	203

TABLE 2D DEER CREEK P204 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10	60			
DF	100	140	90	20		
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3D P204 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	12	215
	2	DF	20	203
	3	DF	14	250
Dominant tree 2				
	1	LP	14	239
	2	LP	14	245
	3	LP	12	215

TABLE 2E DEER CREEK P205 – TREE COUNT PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		10	10	80	30	
Spruce						
AF						
WBP						
Juniper						

TABLE 3E P205 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	21	230
	2	DF	17	200
	3	DF	14	209
Dominant tree 2				
	1			
	2			
	3			

TABLE 2F DEER CREEK P206 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		40	110			
DF		80	60	20		
Spruce						
AF						
Limber						
Juniper						
Aspen						

TABLE 3F P206 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	16	214
	2	DF	18	214
	3	DF	12	228
Dominant tree 2				
	1	LP	12	241
	2	LP	12	244
	3	LP	12	194

TABLE 2G DEER CREEK P207 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10				
DF		70	60	70		
Spruce						
AF						
Limber						
Juniper						

TABLE 3G P207 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	16	177
	2	DF	16	209
	3	DF	16	187
Dominant tree 2				
	1	LP	16	150
	2	LP	12	227
	3	LP	12	248

TABLE 2H DEER CREEK P208 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF	200	140	100			
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3H P208 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	12	76
	2	DF	10	78
	3	DF	10	79
Dominant tree 2				
	1			
	2			
	3			

TABLE 2I DEER CREEK P209 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		40	110	90		
Spruce						
AF						
WBP						
Juniper						

TABLE 3I P209 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	10	250
	2	DF	16	218
	3			
Dominant tree 2				
	1	DF		127
	2			
	3			

TABLE 2J DEER CREEK P210 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP			60	30		
DF		70	40	10		
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3J P210 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	14	208+
	2	DF	14	199
	3	DF	14	226
Dominant tree 2				
	1	LP	18	237
	2	LP	16	247
	3	LP	18	227

TABLE 2K DEER CREEK P211 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		40	30	10		
DF		100	70	30		
Spruce			10	10		
AF						
WBP						
Juniper						
Aspen						

TABLE 3K P211 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	14	248
	2	DF	18	242
	3	DF	14	238
Dominant tree 2				
	1	LP	12	240
	2	LP	14	257
	3	LP	16	247

FIRE HISTORY LEGEND

B – Birth

X – Fire scar

Lp – lodgepole pine

Df – Douglas-fir

Lim – Limber pine

+/- Indicates the date could be more or less

TABLE 4A DEER CREEK BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA																			
EVERGREEN MOUNTAIN – AREA 1								HEAD OF BOX – AREA 2											
YEAR	P201	Scar F LP	P202	P203	P210		AREA 1 FIRES		P204	P205	P206	Scar D LP	P207	P211	Scar H DF	Scar G LP	Scar E LP		AREA 2 FIRES
1963															X				FIRE
1946-54												X							FIRE
1927		X					FIRE												
1926															X				FIRE
1914-21												X							FIRE
1914		X					FIRE												
1875															X				
1874												X							FIRE
1873		X					FIRE												
1853															X				FIRE
1852																			
1849																			
1847															X				FIRE
1845																			
1842													Blp						
1838-47												X					X		FIRE
1832																X			FIRE
1829															X				FIRE
1816			Bdf				FIRE												
1815													Bdf						
1805													Bdf						
1803				Blp			FIRE												FIRE
1801-06												X							
1798											Blp								FIRE
1796			Bdf																
1793					Bdf		FIRE												FIRE
1792										Bdf									

TABLE 4A Cont. DEER CREEK BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA																			
EVERGREEN MOUNTAIN - AREA 1								HEAD OF BOX - AREA 2											
YEAR	P201	Scar F LP	P202	P203	P210		AREA 1 FIRES		P204	P205	P206	Scar D LP	P207	P211	Scar H DF	Scar G LP	Scar E LP		AREA 2 FIRES
1791																	X		FIRE
1790			Bdf																
1789				Bdf					Bdf										
1783				Bdf			FIRE			Bdf			Bdf				X		FIRE
1782	Bdf																		
1778											2Bdf								
1777									2Blpdf										FIRE
1772	2Blpdf						FIRE												
1767				Blp															
1766				Bdf	B														
1765				Blp	B								Blp						FIRE
1764											Bdf								
1763	Bdf																		
1762	Blp						FIRE			Bdf									
1759																X			FIRE
1755					Blp		FIRE												
1754														B df					
1753									Blp										
1752														B lp					
1751											Blp								FIRE
1750														B df					
1748											Blp						B		
1747									Blp										
1746	B	B																	
1745					B		FIRE							B lp					
1744													Blp	B df					FIRE
1742									Bdf										
1735														B lp					FIRE
1731			Blp				FIRE												
1709																			
1704												X							FIRE

TABLE 4B DEER CREEK BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA							TABLE 5 DEER CREEK PROJECTED FIRES FOR SAMPLE AREAS AND FOR THE DRAINAGE				
GROUSE RIDGE - AREA 3							ALL AREAS				
YEAR	P208	P209	Scar 4D DF	Scar 6D DF	Area 3 Fires		EVERGREEN MOUNTAIN AREA 1	HEAD OF BOX AREA 2	GROUSE RIDGE AREA 3		DRAINAGE FIRES
1963								FIRE			FIRE
1946-54								FIRE			FIRE
1926							FIRE	FIRE			FIRE
1916	Bdf										
1914	Bdf						FIRE	FIRE			
1913	Bdf				FIRE				FIRE		FIRE
1898											
1897											
1885				X	FIRE				FIRE		FIRE
1876				X							
1875			X		FIRE				FIRE		FIRE
1873							FIRE	FIRE			
1869											
1868											
1865		Bdf			FIRE				FIRE		FIRE
1855											
1853								FIRE			FIRE
1852											
1849											
1847								FIRE			FIRE
1837-47								FIRE			FIRE
1841											
1837								FIRE			FIRE
1832								FIRE			FIRE
1829								FIRE			FIRE
1816							FIRE				FIRE

TABLE 4A cont. DEER CREEK BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA						TABLE 5 cont DEER CREEK PROJECTED FIRES FOR SAMPLE AREAS AND FOR THE DRAINAGE			
GROUSE RIDGE AREA 3						ALL AREAS			
YEAR	P208	P209	Scar 4D DF	Scar 6D DF	Area 3 Fires	EVERGREEN MOUNTAIN AREA 1	HEAD OF BOX AREA 2	GROUSE RIDGE AREA 3	DRAINAGE FIRES
1803						FIRE	FIRE		FIRE
1798							FIRE		FIRE
1793						FIRE			
1791							FIRE		FIRE
1783						FIRE	FIRE		
1777							FIRE		
1774		Bdf			FIRE			FIRE	FIRE
1772						FIRE			
1765							FIRE		
1762						FIRE			FIRE
1759							FIRE		
1755						FIRE			FIRE
1751							FIRE		FIRE
1745						FIRE			
1744							FIRE		
1742		Bdf			FIRE			FIRE	FIRE
1735							FIRE		FIRE
1731						FIRE			FIRE
1704							FIRE		FIRE

TABLE 6 FIRE RETURN FREQUENCY BY SAMPLE AREA	
EVERGREEN MOUNTAIN	1900-1731 = 169/10 = 17 YEAR RETURN
HEAD OF BOX	1900-1704 = 196/17 = 11.5 YEAR RETURN
GROUSE RIDGE	1900-1742 = 158/5 = 31.6 YEAR RETURN

FIRE RETURN FOR THE DRAINAGE = 1900-1704 = 196/21 = 9.3 YEAR RETURN

TABLE 7 DEER CREEK FIRE RETURN FREQUENCY BY FIRE GROUP										
YEAR	FG 4		FG 5	FG 6					FG 7	
PLOT	P204	P210	P202	P201	P203	P205	P207	P209	P206	P211
1899										
1887										
1883										
1878										
1873				F					F	F
1865								F		
1853										F
1847										F
1838							F		F	F
1832										F
1816			F							
1803					F		F		F	
1798									F	
1793		F	F							
1791						F				F
1783	F		F	F	F	F	F			
1783										F
1777	F								F	
1774								F		
1772				F						
1765							F			
1764									F	
1762		F		F	F					
1759						F				F
1755		F								
1751	F								F	F
1747	F									
1745		F		F						
1744							F			F
1742	F							F		
1735										F
1731			F							
1704									F	
Fire return plot level	31.6	38.8	42.2	31.2	46	47	31.2	52.7	24.5	15
Avg return for plot level	35.2		42.2	41.6					19.8	

SITE THREE– SHIELDS RIVER, GALLATIN NATIONAL FOREST

TABLES

1	Shields River - Site & Vegetation Data
2	Shields River – Tree Count – Per Acre by Plot
3	Shields River - Dominant Tree DBH & Age by Plot
4	Shields River - Birth & Fire Events for Plots by Sample Area
5	Shields River - Projected Fires for Sample Areas and for the Drainage
6	Shields River - Fire Return Frequency by Sample Area
7	Shields River - Fire Return Frequency by Fire Group

TABLE 1 SHIELDS RIVER SITE & VEGETATION DATA									
Plot No	301	302	303	304	305	306	307	320	321
Location	SW,SW,S10 T5N,R10E	SW,NW,S15 T5N,R10E	NE,NW,S15 T5N,R10E	NW,SW,S14 T5S,R10E	NW,SE,S35 T5N,R10E	SE,NW,S1 T4N,R10E	NW,SE,S24 T5N,R10E	NE,NE,S13 T3N,R10E	S24 T3N,R10E
Habitat type	AF/dwarf huckleberry	DF/elk sedge	DF/pinegrass – pinegrass	AF/whortleberry- pinegrass	DF/dwarf huckleberry	AF/pinegrass	S/cleft-leaf groundsel	AF/pinegrass	DF/snowberry- snowberry
Elevation	7130	7300	7380	7240	6940	7280	6430	6700	
Aspect	241	230	167	75	266	266	4	94	24
Slope	37	47	42	40	25	42	7	20	26
Bare soil	0	0	0	0	0	0	0	0	0
Rock & gravel	0	0	3	3	3	0	0	0	0
Litter&duff	70	90	90	80	70	98	80	0	98
Wood	20	3	0	0	20	3	20	10	0
Moss&lichen	3	0	0	10	0	0	0	90	0
Basal veg	3	10	3	0	3	0	0	0	0
Dom tree 1	LP	LP	DF	LP	LP	LP	LP	LP	DF
Dom tree 2	-	DF	LP	-	-	-	S	DF	-
Basal area	140	70	80	100	190	190	140		
BA dead	5	0	0	35	15	5	5	10	0
Trees/acre	460	80	140	670	2870	580	250	240	120
DBH	9	38	14	8	5	10	14	13	22
Height	60	80	58	65	47	62	67		
Age	141	209+	99	116	112	120	128	142	103
Tree cover	40	40	30	70	80	30	50	50	50
TC seed	1	10	1	3	1	1	20	3	0
TC sap	3	1	0	20	60	1	3	1	1
TC pole	10	3	3	10	10	30	10	3	0
Shrub cover	20	0	3	10	0	0	3	3	20
Graminoids	3	3	40	10	3	3	3	10	3
Forb	3	50	60	0	0	3	10	0	20
Fern&moss	0	0	0	0	0	0	0	0	0

TABLE 2A SHIELDS RIVER P301 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		320	140			
DF						
Spruce						
AF						
WBP						
Juniper						

TABLE 3A P301 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	10	139
	2	LP	10	147
	3	LP	8	139
Dominant tree 2				
	1			
	2			
	3			

TABLE 2B SHIELDS RIVER P302- TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		20	30	20		
DF						10
Spruce						
AF						
Limber						
Juniper						
Aspen						

TABLE 3B P302 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	34	203
	2	DF	38	215+
	3	DF	30	144
Dominant tree 2				
	1	LP	16	130
	2	LP	10	134
	3	LP	12	135

TABLE 2C SHIELDS RIVR P303 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP			60			
DF			50	10		
Spruce						
AF						
WBP		20				
Juniper						

TABLE 3C P303 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	18	105
	2	DF	14	100
	3	DF	12	94
Dominant tree 2				
	1	LP	12	105
	2	LP	14	95
	3	LP	12	108

TABLE 2D SHIELDS RIVER P304 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	300	340	30			
DF						
Spruce						
AF						
Limber						
Juniper						
Aspen						

TABLE 3D P304 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	8	127
	2	LP	10	140
	3	LP	10	81
Dominant tree 2				
	1			
	2			
	3			

TABLE 2E SHIELDS RIVER P305 – TREE COUNT PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	2500	370				
DF						
Spruce						
AF						
WBP						
Juniper						

TABLE 3E P305 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	6	107
	2	LP	6	113
	3	LP	6	124
Dominant tree 2				
	1			
	2			
	3			

TABLE 2F SHIELDS RIVER P306 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	100	60	170	10		
DF	100		20			
Spruce				10		
AF		10				
Limber						
Juniper						
Aspen						

TABLE 3F P306 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	10	115
	2	LP	12	123
	3	LP	10	122
Dominant tree 2				
	1			
	2			
	3			

TABLE 2G SHIELDS RIVER P307 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	100	20	60	30		
DF		20				
Spruce		20			10	
AF						
Limber						
Juniper						

TABLE 3G P307 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	14	127
	2	LP	14	134
	3	LP	16	131
Dominant tree 2		S	24	121
	1			
	2			
	3			

TABLE 2H SHIELDS RIVER P320 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10	80	30		
DF		40	60	20		
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3H P320 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	12	144
	2	LP	14	144
	3	DF	13	138
Dominant tree 2				
	1			
	2			
	3			

TABLE 2I SHIELDS RIVER P321 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF			20	70	30	
Spruce						
AF						
WBP						
Juniper						

TABLE 3I P321 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	23	114
	2	DF	19	98
	3	DF	23	96
Dominant tree 2				
	1			
	2			
	3			

FIRE HISTORY LEGEND

B – Birth

X – Fire scar

Lp – lodgepole pine

Df – Douglas-fir

Lim – Limber pine

+/- Indicates the date could be more or less

TABLE 4A SHIELDS RIVER BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA DAVEY BUTTE – AREA 1									
YEAR	P303	Scar 25 DF	Scar 21 DF	Scar 4F LP	P304	P301	P302	Scar 6F DF	AREA 1 FIRES
1949		X							FIRE
1934									
1921									
1914									
1911					Blp				FIRE
1903								X	FIRE
1898	Bdf								
1897	Blp								FIRE
1892	Bdf								
1887	2Bdf,lp								
1885									
1884	Blp								FIRE
1879									
1877									
1875									
1871									
1870									
1869									
1868									
1865					Blp				
1862							Blp		FIRE
1861									
1858							Blp		
1857							Blp		
1855								X	FIRE
1853						2Blp			
1852					Blp				
1849				X					FIRE
1845						Blp			
1841		X							FIRE
1815				B					FIRE
1789							Bdf		FIRE
1781									
1777							B-df		FIRE
1762								B-	
1755-52			X						FIRE
1747			X						FIRE
1737		B							FIRE
1709			X						FIRE
1705									
1630			X						FIRE
1579			B						FIRE

TABLE 4B SHIELDS RIVER BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA BENNETT-SUNLIGHT – AREA 2									
YEAR	P305	Scar 2F LP	Scar 1F LP	P306	Scar 1	Scar 2	Scar 3	P307	Area 2 Fires
1949									
1934		X	X						FIRE
1929						X			FIRE
1921					X				FIRE
1914						X			FIRE
1911									
1903									
1898									
1897									
1892									
1887									
1885	Blp								FIRE
1884									
1879	Blp		B		B				
1877				Blp		B			
1875		B					X		FIRE
1871								Bs	
1870				Blp					
1869				Blp					FIRE
1868	Blp								
1865								Blp	FIRE
1862									
1861								Blp	
1858								Blp	FIRE
1857									
1855									
1853									
1852									
1849									
1845									
1841									
1815									
1789									
1781							X		FIRE
1777									
1762									
1755-52							X		FIRE
1747									
1737									
1709									
1705							B		FIRE
1630									
1579									

TABLE 4C SHIELDS RIVER BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA COTTONWOOD – AREA 3						
YEAR	P320	Scar 3F DF	Scar 5F DF	Scar 23 DF	P321	AREA 3 FIRES
1949						
1934						
1929						
1921						
1914						
1911						
1903						
1898						
1897						
1892						
1896					Bdf	
1894					Bdf	FIRE
1887						
1885						
1884						
1879						
1878					Bdf	FIRE
1877						
1875						
1871						
1870						
1869						
1868						
1865						
1863		X				
1862				X		FIRE
1861			X-			
1858						
1857						
1855						
1854	Bdf					
1853						
1852						
1850		B				
1849						
1848	2Blp			B		FIRE
1845						
1841						
1815						
1789						
1781						
1780			B-			FIRE
1777						
1762						
1755-52						FIRE
1747						
1737						
1709						
1705						
1630						
1579						

TABLE 5 SHIELDS RIVER PROJECTED FIRES FOR SAMPLE AREAS AND FOR THE DRAINAGE				DRAINAGE FIRES
YEAR	DAVY BUTTE AREA 1	BENNETT-SUNLIGHT AREA 2	COTTONWOOD AREA 3	
1949	FIRE			FIRE
1934		FIRE		FIRE
1929		FIRE		FIRE
1921		FIRE		FIRE
1914		FIRE		FIRE
1911	FIRE			FIRE
1903	FIRE			FIRE
1898				
1897	FIRE			FIRE
1892				
1894			FIRE	FIRE
1894				
1887				
1885		FIRE		FIRE
1884	FIRE			FIRE
1879				
1878			FIRE	FIRE
1877				
1875		FIRE		FIRE
1871				
1870				
1869		FIRE		FIRE
1868				
1865		FIRE		FIRE
1863				
1862	FIRE		FIRE	FIRE
1861				
1858		FIRE		FIRE
1857				
1855	FIRE			FIRE
1854				
1853				
1852				
1850				
1849	FIRE			FIRE
1848			FIRE	FIRE
1845				
1841	FIRE			FIRE
1815	FIRE			FIRE
1789	FIRE			FIRE
1781		FIRE		FIRE
1780			FIRE	FIRE
1777	FIRE			FIRE
1762				
1755-52	FIRE	FIRE	FIRE	FIRE
1747	FIRE			FIRE
1737	FIRE			FIRE
1709	FIRE			FIRE
1705		FIRE		FIRE
1630	FIRE			FIRE
1579	FIRE			FIRE

TABLE 6 SHIELDS RIVER FIRE RETURN FREQUENCY BY SAMPLE AREA	
DAVEY BUTTE	1900-1579 = 321/15 = 21.4 YEAR RETURN
BENNETT-SUNLIGHT	1900-1705 = 195/8 = 24.4 YEAR RETURN
COTTONWOOD	1900-1755 = 145/6 = 24.2 YEAR RETURN

FIRE RETURN FOR THE DRAINAGE = 1900-1579 = 321/26 = 12.3 YEAR RETURN

TABLE 7 SHIELDS RIVER FIRE RETURN FREQUENCY BY FIRE GROUP									
YEAR	FG 5	FG 6			FG 7		FG 8		FG 10
PLOT	P302	P303	P305	P321	P301	P304	P306	P320	P307
1949		F							
1934			F						
1929							F		
1921							F		
1914							F		
1911						F			
1897		F							
1894				F					
1885			F						
1884		F							
1878				F					
1875			F				F		
1869							F		F
1865			F						F
1862	F					F		F	
1858									F
1855	F								
1849		F			F	F		F	
1841		F			F				
1838									
1832									
1815		F							
1789	F								
1781							F	F	
1777	F								
1774									
1755		F					F	F	
1747		F							
1737		F							
1709		F							
1705							F		
1630		F							
1579		F							
Fire return plot level	30.8	29.2	11.7	11	29.5	25.5	39	36.2	14
Avg return for plot level	30.8	17.3			27.5		37.6		14

SITE FOUR – SQUAW CREEK, GALLATIN NATIONAL FOREST

TABLES

1	Squaw Creek - Site & Vegetation Data
2	Squaw Creek – Tree Count – Per Acre by Plot
3	Squaw Creek - Dominant Tree DBH & Age by Plot
4	Squaw Creek - Birth & Fire Events for Plots by Sample Area
5	Squaw Creek - Projected Fires for Sample Areas and for the Drainage
6	Squaw Creek - Fire Return Frequency by Sample Area
7	Squaw Creek - Fire Return Frequency by Fire Group

TABLE 1A SQUAW CREEK SITE & VEGETATION DATA									
Plot No	400	401	402	403	404	405	406	407	408
Location	NE,NW,S1 T5S,R4E	NE,SW,S5 T5S,R5E	NE,SW,S31 T4S,R5E	SW,SE,S24 T4S,R5E	NE,SW,S24 T4S,R5E	SW,SW,S18 T5S,R5E	N,SE,S24 T5S,R4E	SW,SW,S8 T5S,R5E	NW,SW,S2 T5S,R5E
Habitat type	SCREE	DF/snowberry – snowberry	DF/snowberry – pinegrass	DF/elk sedge	AF/alder	DF/snowberry – pinegrass	S/solomon's Seal	DF/ninebark – pinegrass	DF/elk sedge
Elevation	5950	6240	6670	7250	7390	7310	6810	6770	7640
Aspect	68	185	304	184	144	120	204	49	194
Slope	48	53	20	40	12	28	18	19	64
Bare soil	0	0	0	0	0	10	0	0	0
Rock & gravel	0	0	0	0	3	0	0	0	0
Litter&duff	90	98	90	90	90	90	90	80	98
Wood	3	3	10	3	10	3	10	3	3
Moss&lichen	0	0	0	0	0	0	0	10	3
Basal veg	0	0	0	3	0	3	1	3	3
Dom tree 1	DF	DF	DF	DF	DF	DF	DF	DF	DF
Dom tree 2	S	LP	-	-	-	-	-	-	LP
Basal area	90	150	170	110	60	90	150	150	150
BA dead	0	0	5	10	10	10	0	15	0
Trees/acre	230	130	320	110	520	260	220	270	160
DBH	17	18	15	16	12	20	21	14	25
Height	71	80	83	78	63	82	85	61	82
Age	140	152	191	108	173	205	197	258	259
Tree cover	30	40	50	50	30	50	60	30	40
TC seed	3	1	10	1	10	1	1	1	1
TC sap	1	1	3	3	5	1	10	3	1
TC pole	3	3	10	3	10	10	3	10	10
Shrub cover	30	40	10	10	60	40	20	40	3
Graminoids	5	1	10	20	3	10	10	20	10
Forb	5	20	20	10	1	10	3	1	70
Fern&moss	0	0	0	0	0	0	0	0	1

TABLE 1B SQUAW CREEK SITE & VEGETATION DATA								
Plot No	409	410	411	412	413	414	415	416
Location	NW,SW,S4 T4E,R5E	NW,SE,S11 T5S,R4E	NE,NE,S11 T5S,R4E	NE,SE,S12 T5S,R4E	NE,NWS32 T4S,R5E	NE,SE,S19 T5S,R5E	SE,SW,S20 T5S,R5E	SE,SW,S2 T5S,R5E
Habitat type	DF/snowberry – pinegrass	AF/whortleberry- whortleberry	DF/snowberry – pinegrass	DF/snowberry – pinegrass	DF/snowberry – pinegrass	DF/snowberry – snowberry	DF/pinegrass- Pingrass	AF/huckleberry
Elevation	7010	7360	6900	7590	7190	7520	7310	7490
Aspect	169	348	145	145	190	146	146	269
Slope	32	17	42	46	42	17	50	55
Bare soil	0	0	0	10	0	0	3	0
Rock & gravel	3	3	10	0	10	0	10	10
Litter&duff	90	70	80	80	80	80	60	70
Wood	3	0	10	3	3	10	0	10
Moss&lichen	3	20	3	0	10	0	20	3
Basal veg	3	10	1	3	3	3	3	3
Dom tree 1	DF	LP	DF	DF	DF	LP	DF	LP
Dom tree 2	-	-	-	-	-	-	-	-
Basal area	120	160	50	150	150	130	100	70
BA dead	5	40	10	20	15	30	10	30
Trees/acre	130	1290	140	180	120	1050	140	560
DBH	16	6	16	15	23	7	15	10
Height	71		85	71	91	53	71	80
Age	163	111	169	158	240	104	256	208
Tree cover	40	60	50	60	50	70	50	30
TC seed	1	1	1	3	1	3	1	10
TC sap	10	20	3	1	0	10	0	3
TC pole	3	30	3	10	3	30	10	10
Shrub cover	60	30	50	20	30	30	10	40
Graminoids	20	1	10	10	20	10	20	20
Forb	1	40	20	50	40	20	10	3
Fern&moss	1	1	1	0	1	0	10	0

TABLE 2A SQUAW CREEK P400 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10	20			
DF	100	20	20		20	
Spruce			10			
AF						
WBP						
Juniper		20				
Aspen		10				

TABLE 3A P400 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	22	144
	2	DF	30	131+
Dominant tree 2				
	1	LP	12	101
	2	DF	14	107
	3	LP	12	114

TABLE 2B SQUAW CREEK P401 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP			10	20		
DF		10	20	70		
Spruce						
AF						
WBP						
Juniper	100					
Aspen						

TABLE 3B P401 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	22	103
	2	LP	16	143
		DF	24	212
Dominant tree 2				
	1	LP	18	86
	2	DF		
	3	DF		

TABLE 2C SQUAW CREEK P402 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF	100	50	110	60		
Spruce						
AF						
WBP						
Juniper						

TABLE 3C P402 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	20	188
	2	DF	16	195
	3	DF	16	190
Dominant tree 2				
	1	DF	10	174
	2	DF	12	194
	3	DF	10	133

TABLE 2D SQUAW CREEK P403 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		30	30	50		
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3D P403 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	20	110
	2	DF	16	109
	3	DF	18	106
Dominant tree 2		DF	12	106+
	1	DF	30	162+
	2	DF	28	144
	3	DF	22	195

TABLE 2E SQUAW CREEK P404 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	100	20	10			
DF		40	10			
Spruce		20				
AF	300	20				
WBP						
Juniper						

TABLE 3E P404 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	14	114
	2	DF	12	224
	3	LP	10	182
Dominant tree 2				
	1	DF		
	2	DF		
	3	DF		

TABLE 2F SQUAW CREEK P405 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF	200		20	10	20	10
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3F P405 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	42	179+
	2	DF	34	179+
	3	DF	26	207
Dominant tree 2				
	1	DF	12	130
	2	DF	16	126
	3	DF	12	131

TABLE 2G SQUAW CREEK P406 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP			10			
DF		10	20	10	40	10
Spruce	100	20				
AF						
WBP						
Juniper						

TABLE 3G P406 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	20	200
	2	DF	26	199
	3	DF	24	192
Dominant tree 2				
	1	LP	14	159
	2	DF	18	147
	3	DF	16	139

TABLE 2H SQUAW CREEK P407 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		160	70	30	10	
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3H P407 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	16	257
	2	DF	18	259
	3	DF	18	260
Dominant tree 2				
	1	DF	10	267
	2	DF	12	264
	3	DF	12	260

TABLE 2I SQUAW CREEK P408 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10	40	10		
DF		20	40	30	10	
Spruce						
AF						
WBP						
Juniper						

TABLE 3I P408 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	26	158+
	2	DF	22	222
	3	DF	28	256
Dominant tree 2				
	1	DF	14	137
	2	LP	12	160
	3	LP	14	166

TABLE 2J SQUAW CREEK P409 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		20	40	60	10	
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3J P409 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	26	162
	2	DF	22	181
	3	DF	18	148
Dominant tree 2				
	1	DF	10	140
	2	DF	14	122
	3	DF	10	122

TABLE 2K SQUAW CREEK P410 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	500	790				
DF						
Spruce						
AF						
WBP						
Juniper						

TABLE 3K P410 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	8	112
	2	LP	8	112
	3	LP	8	109
Dominant tree 2				
	1			
	2			
	3			

TABLE 2L SQUAW CREEK P411 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF	100		10	10	20	
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3L P411 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	18	164
	2	DF	22	185
	3	DF	26	159
Dominant tree 2				
	1	DF	14	112
	2	DF	12	106
	3	DF	10	104

TABLE 2M SQUAW CREEK P412 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP		10				
DF		60	60	40	10	
Spruce						
AF						
WBP						
Juniper						

TABLE 3M P412 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	18	147
	2	DF	22	165
	3	DF	16	164
Dominant tree 2				
	1	DF	10	138
	2	DF	12	163
	3	DF	10	144

TABLE 2N SQUAW CREEK P413 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		20	20	40	30	10
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3N P413 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	36	263
	2	DF	32	230+
	3	DF	24	202+
Dominant tree 2				
	1	DF	16	206
	2	DF	16	181
	3	DF	16	232

TABLE 20 SQUAW CREEK P414 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	400	530	10			
DF	100	10				
Spruce						
AF						
WBP						
Juniper						

TABLE 30 P414 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	10	105
	2	LP	8	103
	3	LP	8	105
Dominant tree 2				
	1			
	2			
	3			

TABLE 2P SQUAW CREEK P415 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP						
DF		50	50	30	10	
Spruce						
AF						
WBP						
Juniper						
Aspen						

TABLE 3P P415 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	DF	28	267
	2			
	3			
Dominant tree 2				
	4	DF	20	264
	5	DF	16	239
	6	DF	18	259

TABLE 3Pcont. P415 - DOMINANT TREE DBH & AGE				
Dominant tree 3				
	7	DF	10	215
	8	DF	12	230
	9	DF	10	245

TABLE 2Q SQUAW CREEK P416 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
LP	100	50	100			
DF						
Spruce		10				
AF	200					
WBP						
Juniper						

TABLE 3Q P416 - DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	12	205
	2	LP	10	207
	3	LP	12	214
Dominant tree 2				
	1			
	2			
	3			

FIRE HISTORY LEGEND

B – Birth

X – Fire scar

Lp – lodgepole pine

Df – Douglas-fir

+/- Indicates the date could be more or less

TABLE 4A SQUAW CREEK – BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA RAT LAKE – AREA 1										
YEAR	P400	P411	Scar WW DF	P410	Scar RR LP	Scar GG LP	P412			AREA 1 FIRES
1891	Blp									FIRE
1888		Bdf								
1886		Bdf								
1885	Blp									
1883				Blp						
1880		Bdf		2Blp	X	X				FIRE
1878	B+lp									
1869										
1868										
1865										
1863			X-							
1862										
1861	B-df									FIRE
1858										
1857										
1855										
1854							Bdf			
1852										
1848	Bdf						Bdf			
1845							Bdf			FIRE
1842										
1833		Bdf								
1829							Bdf			
1828		Bdf					Bdf			
1827							Bdf			FIRE
1816										
1815										
1807		Bdf								FIRE
1805										
1803										
1798										
1796										
1793										
1792						B				
1791					B					FIRE
1789										
1783										
1782										
1778										
1766										
1765										
1764										
1763										
1762										
1755										
1754										
1753										
1752										
1751										
1750										
1748										
1747										

TABLE 4B SQUAW CREEK – BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA SMITH CREEK – AREA 2										
YEAR	P401	Scar OO LP	P409	Scar CC LP						AREA 2 FIRES
1952				X						FIRE
1906	Blp									FIRE
1891										
1889	Bdf									FIRE
1888										
1886										
1885										
1883										
1880										
1878										
1870			2Bdf							
1869										
1868										
1865		X								FIRE
1863										
1862										
1861										
1858										
1857										
1855										
1854										
1852			Bdf							
1849	Bdf									FIRE
1848										
1845										
1844			Bdf							
1837				B						
1833										
1830			Bdf							FIRE33
1829										
1828										
1827										
1815										
1811			Bdf							FIRE
1807										
1805										
1803										
1798										
1796										
1792										
1791										
1789										
1783										
1782										
1780	Bdf		Bdf							FIRE
1778										
1777										
1772										
1767										
1766										
1765										
1764										
1763										

TABLE 4C SQUAW CREEK – BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA MICA CREEK – AREA 3										
YEAR	P402	Scar XX LP	P413	Scar yy DF	P403	P404	Scar JJ LP			AREA 3 FIRES
1888										
1886					Bdf					
1885					B-df					
1883					Bdf					
1882					Bdf					FIRE
1880										
1878						Bdf				
1870										
1869										
1868										
1865		X		X						FIRE
1864							X			
1863										
1862										
1861										
1859	Bdf									FIRE
1848					B+-df					
1845										
1844										
1837										
1833										
1830					B+-df					FIRE
1829										
1828										
1827										
1818	Bdf									
1811			Bdf							
1810						Blp				FIRE
1807										
1804	Bdf									
1802	Bdf									
1800		B								
1798	Bdf									
1797	Bdf				Bdf					FIRE
1793										
1792										
1791										
1789										
1786			Bdf	X						FIRE
1785			Bdf							
1783										
1782										
1781							X			FIRE
1780										
1770				X						FIRE
1768						B+df				
1766										
1764										
1760			Bdf							
1757			Bdf							
1754							X?			FIRE
1729			Bdf							FIRE
1712							B			FIRE

TABLE 4D SQUAW CREEK – BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA GREEK-SWAN – AREA 4										
YEAR	P406	P405	Scar HH DF	Scar SS DF	P414	P415	Scar GG DF			AREA 4 FIRES
1966-8				X						FIRE
1952										
1939				X						FIRE
1913			X	X						FIRE
1910							X			FIRE
1906										
1891										
1889					Blp					
1888										
1887					2Blp					
1886				X						FIRE
1868										
1866		Bdf								
1865										
1864							X+?			FIRE
1863										
1862		Bdf								
1861		Bdf								
1853	Blp									FIRE
1852										
1849										
1848										
1845	Blp									FIRE
1844										
1839			X							FIRE
1837										
1834			X							FIRE
1833	B+df									
1813		2B-df	B							
1811										
1807				X						FIRE
1804										
1802							X?			FIRE
1800	Blp									
1798										
1797										
1793	Blp									
1792	Blp									
1791										
1790							X?			FIRE
1789										
1786										
1785		Bdf								
1777						Bdf	X			FIRE
1772										
1770										
1762						Bdf				FIRE
1753						Bdf				
1747						Bdf	X			FIRE
1733						Bdf				
1728						Bdf				
1725						Bdf	B			FIRE

TABLE 4E SQUAW CREEK – BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA LIME CREEK – AREA 5										
YEAR	P407	Scar BB DF	Scar LL DF							AREA 5 FIRES
1970			X							FIRE
1966-8										
1952										
1939										
1913										
1906										
1891										
1889										
1888										
1886										
1885										
1883										
1880										
1878										
1870										
1869										
1868			X							FIRE
1866										
1833										
1830										
1829										
1828										
1827										
1792										
1791										
1790										
1789		X								FIRE
1786										
1785										
1783										
1782										
1780										
1778										
1777										
1772										
1770										
1762										
1760		X								FIRE
1753										
1747										
1735	Bdf									
1733	Bdf									
1732	2Bdf									
1728	Bdf									
1725	Bdf									
1723			X							FIRE
1703		X								FIRE
1658			B							
1657		B								FIRE

TABLE 4F SQUAW CREEK – BIRTH & FIRE EVENTS FOR PLOTS BY SAMPLE AREA SPRING CREEK – AREA 6										
YEAR	P408	P416	Scar XX LP							AREA 6 FIRES
1970										
1966-8										
1952										
1939										
1913										
1906										
1891										
1889										
1888										
1885										
1883										
1880										
1878										
1870										
1869										
1868										
1866										
1855	Bdf									FIRE
1833										
1832	Blp		X							FIRE
1830										
1829										
1828										
1827										
1826	Blp		X							FIRE
1823	B+-df		X							FIRE
1800			B							FIRE
1792										
1791										
1790										
1789										
1787		Blp								
1786										
1785		Blp								FIRE
1783										
1782										
1780										
1778		Blp								FIRE
1777										
1772										
1770	Bdf									FIRE
1762										
1760										
1753										
1747										
1736	Bdf									FIRE
1735										
1733										
1732										
1728										
1725										
1723										
1703										

TABLE 5 SQUAW CREEK PROJECTED FIRES FOR SAMPLE AREAS AND FOR THE DRAINAGE										
YEAR	RAT LAKE	SMITH CREEK	MICA CREEK	GREEK SWAN	LIME CREEK	SPRING CREEK				DRAINAGE FIRES
1970					F					FIRE
1966-8				XF						FIRE
1952		XF								FIRE
1939				XF						FIRE
1913				XF						FIRE
1910				XF						FIRE
1906		F								FIRE
1891	Flp									
1889		F								FIRE
1886				XF						FIRE
1882			F							
1880	XF									FIRE
1869										
1868					XF					FIRE
1865		XF	XF	XF						FIRE
1862										
1861	XF									FIRE
1859			F							
1858										
1857										
1855						F				FIRE
1853				F						
1852										
1849		F								FIRE
1845	F			F						FIRE
1842										
1839				XF						FIRE
1834				XF						FIRE
1832						XF				
1830		F	F							FIRE
1827	F									
1826						XF				FIRE
1823						XF				FIRE
1816										
1815										
1811		F								
1810			F							FIRE
1807	F			XF						FIRE
1805										
1803										
1802				XF						FIRE
1800						F				
1798										
1797			F							FIRE
1796										
1793										
1792										
1791	F									
1790				XF						
1789					XF					FIRE
1786			XF							FIRE
1785						F				
1783										
1782										
1781			XF							FIRE

TABLE 5 cont. SQUAW CREEK PROJECTED FIRES FOR SAMPLE AREAS AND FOR THE DRAINAGE

YEAR	RAT LAKE	SMITH CREEK	MICA CREEK	GREEK SWAN	LIME CREEK	SPRING CREEK				AREA FIRES
1780		F								
1778						F				
1777				XF						FIRE
1772										
1770			XF			F				FIRE
1767										
1766										
1765										
1764										
1763										
1762				F						
1760					XF					FIRE
1755										
1754			XF							FIRE
1753										
1752										
1751										
1750										
1748										
1747				XF						FIRE
1746										
1745										
1744										
1742										
1736						F				FIRE
1731										
1729			F							FIRE
1725				F						
1723					XF					FIRE
1712			F							FIRE
1709										
1703					XF					FIRE
1657					F					FIRE

TABLE 6 SQUAW CREEK FIRE RETURN FREQUENCY BY SAMPLE AREA

RAT LAKE	1900-1791=109/7= 16 YEAR RETURN
SMITH CREEK	1900-1780=120/6= 20 YEAR RETURN
MICA CREEK	1900-1712=188/12= 16 YEAR RETURN
GREEK-SWAN	1900-1725=175/13=14 YEAR RETURN
LIME CREEK	1900-1657=243/6=41 YEAR RETURN
SPRING CREEK	1900-1736=164/9= 18 YEAR RETURN

FIRE RETURN FOR THE DRAINAGE = $1900-1657 = 243/32 = 7.6$ YEAR RETURN

TABLE 7 SQUAW CREEK FIRE RETURN FREQUENCY BY FIRE GROUP																
YEAR	FG 0	FG 4	FG 5		FG 7		FG 8	FG 9	FG 6							
PLOT	P400	P407	P403	P408	P410	P416	P406	P409	P401	P402	P405	P409	P411	P412	P413	P415
1970		F														
1891	F															
1889									F							
1882			F													
1880	F				F								F			
1868		F														
1865								F	F	F		F			F	
1864											F					F
1861	F												F			
1859			F							F						
1855				F												
1853							F				F					
1849									F			F				
1848	F															
1845							F							F		
1839											F					
1834							F				F					
1832				F		F										
1830			F									F				
1827													F	F		
1826				F		F										
1823				F		F										
1811												F				
1810								F		F					F	
1807											F		F			
1802							F									F
1800						F										
1797			F							F						

TABLE 7 cont.		SQUAW CREEK FIRE RETURN FREQUENCY BY FIRE GROUP														
YEAR	FG 0	FG 4	FG 5		FG 7		FG 8	FG 9	FG 6							
PLOT	P400	P407	P403	P408	P410	P416	P406	P409	P401	P402	P405	P409	P411	P412	P413	P415
1791					F											
1790																F
1789		F														
1786															F	
1785						F										
1781								F								
1780									F			F				
1778						F										
1777											F					F
1770				F			F	F							F	
1762																F
1760		F														
1754								F							F	
1747																F
1736				F												
1729															F	
1725																F
1723		F														
1712								F								
1703		F														
1657		F														
Fire return plot level	13	41	26	27	55	20	26	31	30	26	21	24	23	37	29	25
Avg return for plot level information	13	41	26.5		37.5		26	31	27							

SITE FIVE – ODELL LAKE-BIBLE CAMP, BEAVERHEAD-DEERLODGE NATIONAL FOREST

This site was visited as it was known that some of the lodgepole stands were quite old and had either survived past fires or were in an area of limited fire occurrences. Results of the study suggest that most fires were spotty or underburns which permitted most of the trees to survive.

TABLES

- 1 Odell Lake-Bible Camp - Site & Vegetation Data
- 2 Odell Lake-Bible Camp – Tree Count – Per Acre by Plot
- 3 Odell Lake-Bible Camp - Dominant Tree DBH & Age by Plot
- 4 Odell Lake-Bible Camp - Birth & Fire Events for Plots by Sample Area

TABLE 1 BIBLE CAMP – ODELL LAKE SITE & VEGETATION DATA		
Plot No	025	026
Location	SW,S23,T1S,R13W Bible Camp Park	NW,NE,S17,T3S,R13W Odell Lake
Habitat type	AF/bluejoint-bluejoint	AF/woodrush –grouse whortleberry
Elevation	7730	8540
Aspect	23	174
Slope	5	15
Bare soil	0	1
Rock & gravel	0	10
Litter&duff	70	70
Wood	10	10
Moss&lichen	3	3
Basal veg	10	3
Dom tree 1	LP	WBP
Dom tree 2	-	LP
Basal area	280	100
BA dead	0	55
Trees/acre	890	200
DBH	21	15
Height	80	62
Age	296	300
Tree cover	50	40
TC seed	1	20
TC sap	10	3
TC pole	10	3
Shrub cover	10	40
Graminoids	40	3
Forb	0	0
Fern&moss	1	0

TABLE 2A BIBLE CAMP P025 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
WP						
LP	300	50	10	40	80	
DF						
Spruce	100	10				
AF	200					
WBP	100					

TABLE 3A DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	20	336
	2	LP	18	289+
	3	LP	24	264+
Dominant tree 2				
	1			
	2			
	3			

TABLE 2B BIBLE CAMP P026 - TREE COUNT – PER ACRE						
SPECIES	1” – 4.9”	5” – 8.9”	9” – 13.9”	14” – 20.9”	21” – 32.9”	33” +
Larch						
PP						
WP						
LP		10	50			
DF						
Spruce						
AF		10				
WBP	100	10	20			

TABLE 3B DOMINANT TREE DBH & AGE				
Dominant tree 1	Tree number	Species	Diameter	Age
	1	LP	13	290
	2	LP	14	302
	3	LP	15	310
Dominant tree 2				
	1			
	2			
	3			

TABLE 4A BIRTH & FIRE EVENTS FOR PLOTS ODELL LAKE						TABLE 4B BIRTH & FIRE EVENTS FOR PLOTS BIBLE CAMP PARK							
YEAR	P026	Scar 105 LP	Scar 106 LP	Scar 108 WBP	ODELL LAKE FIRES	P025	Scar 101 LP	Scar 102 LP	Scar 103 LP	Scar 107 LP	BIBLE CAMP FIRES	AREA FIRES	
1949		X			FIRE							FIRE	
1945				X+									
1931			X-										
1929		X			FIRE							FIRE	
1909										X	FIRE	FIRE	
1888								B			FIRE	FIRE	
1870									B				
1868										X	FIRE	FIRE	
1755													
1754													
1753													
1752													
1751							X			B	FIRE	FIRE	
1750													
1748													
1747													
1746				X	FIRE							FIRE	
1745													
1744													
1742													
1728						B lp					FIRE	FIRE	
1710				X	FIRE							FIRE	
1705			B										
1703						B lp					FIRE		
1702	B lp				FIRE							FIRE	
1695							B lp				FIRE		
1693		B											
1690	B lp				FIRE							FIRE	
1682	B lp												
1677				X	FIRE							FIRE	
1656						B lp					FIRE	FIRE	
1620				B	FIRE							FIRE	

FIRE RETURN FOR ODELL LAKE = $1900-1620 = 280/6 = 46.7$ FG 9

FIRE RETURN FOR BIBLE-CAMP = $1900-1656 = 244/8 = 30.5$ FG 10

SITE SIX– RED MOUNTAIN, GALLATIN NATIONAL FOREST

Red Mountain samples were on the interface with the grasslands near 7500 feet elevation.

TABLE 1 BIRTH & FIRE EVENTS FOR SAMPLED FIRE SCARED TREES RED MOUNTAIN						
YEAR	Scar 22 DF	Scar 24 DF	Scar 26 DF	Scar 27 LP	Scar 28 DF	AREA FIRES
Location	SW,S17 T7S,R8E	S17, T7S,R8E	SW,S17 T7S,R8E	SW,S17 T7S,R8E	SW,S17 T7S,R8E	
1963			X			FIRE
1932			X			FIRE
1917			X			
1916	X					FIRE
1877		X				FIRE
1872	X		X			FIRE
1869						
1868						
1815						
1805			B+-			
1804				X		FIRE
1800	B+-					
1798						
1783						
1781					X	FIRE
1778						
1777						
1775					X	FIRE
1769				X		FIRE
1766						
1742						
1734				B+-		
1733					B+-	FIRE
1709						

AREA FIRE RETURN – 1900-1733 = 167/7 = 23.9 FIRE RETURN

SITE SEVEN– FINNEGAN RIDGE, TURNER RANCH,

The Ted Turner’s Spanish Creek Ranch in part covers the foothills to the north of the Gallatin National Forest. It represents the ecotone between the grasslands of the Gallatin valley and higher forest communities. The area sampled was in a grass-sagebrush community with scattered limber pine and Douglas-fir pockets occurring in the more mesic sites. The site probably would be in Fire Group 1.

TABLE 1 BIRTH & FIRE EVENTS FOR SAMPLED FIRE SCARED TREES – FINNIGAN RIDGE				
YEAR	Scar 1C Lim pine	Scar 2 Lim pine	Scar 3 DF	AREA FIRES
Location	SW,S8, T4S,R3E	NW,S19 T3S,R3E	NE,S19 T3S,R3E	
1953			X+-	FIRE
1932				
1929			X+-	FIRE
1918			X+-	FIRE
1917				
1916				
1898			X+-	
1896	X			FIRE
1884		X		FIRE
1877				
1872				
1860			X	FIRE
1858				
1857				
1855				
1853				
1852				
1849			X	FIRE
1845				
1842				
1816				
1835	X			FIRE
1815				
1805				
1800				
1781				
1779		B+-		
1776			B+-	FIRE
1775				
1769				
1766				
1765				
1746				
1745				
1744				
1742				
1734				
1733				
1709				
1690	B+-			FIRE

AREA FIRE RETURN – 1900-1690 = 210/7 = 30 YEAR RETURN